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| Sydney international school of technology and commerce |
| ICT303 - Group Assessment Briefing Document |
| Assessment 3: Proposed Solution and Implementation Design |
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| **1/31/2022** |

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| In the document “Assignment 1 and 2”, we have identified a existing problem and Developed an IT related solution followed by identifying functional and non-functional requirements related to the particular issue. In addition to those documents, this document is prepared as a final documents which illustrate about final requirements, the proposed design and the project management implementation approach. |

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## Introduction

In this documentation, the team will present the final requirements, design proposal, project management approach based on project management tools and techniques. Team will represent approach using work breakdown, project and resource plan as well as communication plan to develop the IT solution to the difficulties faced by the rooster manager in Abacus IT rental company.

As per the case the rooster manager face difficulties handling the temporary staff when the projects are too big and required lot of temporary staffs. Also, using paper based tracking and management is les reliable and consumes a lot of time. Using paper is not the cost effective and environment friendly method of tracking and managing the team.

To solve these problem team has proposed the Rooster management system which will help to manage the temporary staffs needed for the project as well as act as communication channels and staff management portal as well. Roster Management System is a web-based software that lets you manage the availability of your workforce and allocate work to them. It helps you to create rostering rules, manage roster updates and create availability reports. You can add holidays, unscheduled leave and roster holidays to your rostering rules.

Roster Management System is a software that helps you manage your staffs' schedules. It enables you to create a roster, assign different staffs to different shifts, and edit the shifts of the staffs. The software also allows you to add holidays, shift duration and other information about the staffs. You can also mark the staffs as full-time or part-time. You can easily make changes in your staffs' schedules and their information by using the Roster Management System.

Roster Management system will be web-based software portal for small to medium-sized worksite. It will plan and designed for the efficient and cost-effective management of temporary staff by saving cost and time. It will user-friendly, simple and flexible tool that will allow both the client and their contractors to view and manage rosters, interpret data and perform basic management functionalities.

Building with a focus on the client and rooster managers, system will be modern, intuitive and user-friendly solution with a superb user interface and clean design. With Roster’s easy-to-use features, you can create a detailed rooster management and easily handle the temporary workforce with ease.

## Final requirements

In order to better manage human resources and communicate work goals more conveniently, we decided to develop ROSTER Management system. The main function is to manage the working hours of the casual staffs hired by the company. The employees first log in to the system to provide the available working hours, and the managers will then assign the matching work items. Finally, the work results of the staff can be evaluated through the recorded working hours and work results. .

The system will be completed in the form of a web page containing a database containing login and registration and dashboard pages used by administrators. At the beginning, the staff registered an account, and filled in the name, email, phone number and position to complete the creation of the account. After logging in to the account, there will be a form to fill in the daily working hours within a week, the current work goals will be displayed at the bottom, and the relevant resource files or audio and video files will be displayed for personnel training. This page can also record work proposals and upload related verification documents.

After logging in, the staff can click on the working hours to clock in and record the working hours.

Managers can enter the dashboard page, first enter the account password to enter the personnel management system, this page displays the personnel list, there is a list of all personnel or can choose to list only the personnel associated with a single work item, click personnel to see their daily availability. During the working period, you can choose whether it is a working status by changing the status. You can select the work item of the staff in the field of the target work item. Click the staff work statistics to display the working hours of the staff each week. Finally, you can count the working hours of the staff every week and figure out salary.

Under the dashboard page, managers can create a work item, enter its start and end time, minimum and maximum personnel requirements, upload related files and resource files or audio and video files, and record related work instructions

There is a statistics page under the dashboard page to display the start and end time of each work item. Managers can select the relevant personnel of the work item to leave comments on them and choose A~E, which can be used as a reference for rewards. When selecting a staff, each staff member's work item, working hours used and last completed evaluation are displayed for each staff member.

The staff login password can be modified on the login page, the original password must be entered twice, and then the new password must be entered. When you enter the wrong password three times on the login page, you must wait for 30 minutes. If you forget your password, you can enter your email to get the password again.

The response time of the web page of ROSTER Management system is no more than two seconds at any time, and the time for the web page to complete the database reading and loading is no more than five seconds.

Under the dashboard page, you can use USB to back up all web pages and database files to avoid data loss caused by human or equipment damage.

The operating device that is usually run is a computer, but the webpage must comply with the html specification. It can be operated normally using windows and mac, but basic operations such as login can be completed by using devices such as mobile phones or tablets.

## Sitemap

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## Planned System Modelling

### Context modeling

We have illustrated the operational context and divided into three subsystems, Roster management, Pay management and Data Storage. It shows what lays outside our project system boundaries.

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Figure 1: System Context model for the ROSTER Management system

## Process Perspective

This diagram shows how our project being developed performs with its border business .When the employee logs in, the availability working hours are provided, the manager provides the request, and if it matches, the approve for work is provided to complete the system interaction.

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Figure 2: System perspective for the system Interaction Models

## Use Case Diagram

Here we have represented a discreet task between actors interaction with the system. This diagram showing the needs and actions of key stakeholders for the Roster management system. Now we plan three login identities, employee, trainee, manager.

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Figure 3: Use case diagram for Employee, Manager and trainee.

## Sequence diagram

The sequence diagram shows employee interactions with objects in chronological order by the Roster management system.

It is divided into several actions: login, sign-up, and interaction with manager.

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Figure 4: Login Sequence diagram for Employee

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Figure 5: Sign-up Sequence diagram for Employee

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Figure 6 Sequence diagram for roster management

### Class Diagram

UML Classes Diagram shows the relationship between Trainee, employee and Roster Manager when operating Training

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Figure 7 UML Classes Diagram for ROSTER management system.

It is a link that indicates relationship between classes. This diagram represents the name, attributes and Operations of the Classes.

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Figure 8 Class Associations for ROSTER Management system

## Behavioral Module

### Data Modelling

Data modelling represents the sequence of actions attracted In Input and Output process. The Data modeling diagram represents the components and deployment of the system and is a static view of the analysis and design application.

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Figure 9 Data modeling diagram for roster management

### Event-driven Modelling

The Event-driven Behavioral Module diagram represents the activity flow modeling of the roster management system. Introduces the flow of the system, describes parallelism, branching, and concurrent flow of the roster management system.

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Figure 10 Event-driven Behavioral Module diagram

## Object Oriented Design

### System Context

An association diagram of subsystems represented by objects in the roster management system.

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Figure 11 system context object oriented design.

### Use Case

The purpose of the Use Case diagram is to describe the dynamic aspects of the roster management system.

We used four actors, Availability management, Role management, Training management and User management. Below are actors and their use cases

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Figure 12 Availability management use case Diagram for ROSTER MANAGEMENT SYSTEM

图示

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Figure 13 Role management use case Diagram for ROSTER MANAGEMENT SYSTEM.

图示

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Figure 14 Training management use case Diagram for ROSTER MANAGEMENT SYSTEM

图示

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Figure 15 User management use case Diagram for ROSTER MANAGEMENT SYSTEM

## 

## project management implementation approach

WBS (work breakdown structure) will be used to assign tasks and schedule time in order to allocate time more efficiently and guarantee that activities are completed on time. A WBS (Work Breakdown Structure) is a graphic representation of a project's numerous tiers. It's a method of better visualising the targeted outcomes.

The work breakdown structure may be produced using a mix of workflow management software and specialised approaches since it is visible. Timelines, Kanban boards, and calendars are just a few of the tools available.

### WBS

First divide the items into three levels and categorize them:

*WBS name: ROSTER Management System*

*Description: Use the new system to properly manage employees, train the management organization to reach their full potential, as the focus will be more on material task completion, rather than managing by managers requiring a specific number of employees in this system to work during individual periods extra time. Employees can accept or reject polls during work hours based on their shift manager, and employees can provide their time or hours in advance. Employees can also practice their upcoming tasks with the help of training materials provided in the system.*

*Completion date: 30/6/22*

*Budget: $85440*

*Level 1:*

1. *website design*

*Level 2:*

1. *Employee page Design*
2. *Login/Register page Design*
3. *Training Page Design*
4. *Poster Manager Page Design*
5. *Trainee Page Design*
6. DB Build
7. *Server Build*

*Level 3:*

1. *Employee page Design*

*UI Design*

*Function Coding*

*DB connection*

*Testing*

1. *Login/Register page Design*

*UI Design*

*Function Coding*

*DB connection*

*Testing*

1. *Training Page Design*

*UI Design*

*Function Coding*

*DB connection*

*Testing*

1. *Poster Manager Page Design*

*UI Design*

*Function Coding*

*DB connection*

*Testing*

1. *Trainee Page Design*

*UI Design*

*Function Coding*

*DB connection*

*Testing*

1. DB Build

Entity relationship Diagram

Data Structure

DB Testing

1. *Server Build*

*Domain hair*

*Function call and back*

*Server Setup*

Based on staff changes and project changes, I recalculated the project's budget, as shown in the image below:

The following is the WBS dictionary

The main purpose of the WBS dictionary is to explain each task in more detail. This is because the visual nature of a good WBS does not allow for a detailed explanation. Creating a dictionary helps team members find various tasks easily.

The cost of this project is shown in the table below:

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Name | Price | Time | Amount | Total |
| Developer | $30/h | 8hour\*5days\*12week | 4 | $57600 |
| Project manager | $45/h | 8hour\*5days\*12week | 1 | $21600 |
| Firebase | $50 | 12 month | 1 | $600 |
| iphone | $1800 |  | 1 | $1800 |
| Android phone | $1200 |  | 1 | $1200 |
| tablet | $600 |  | 1 | $600 |
| Domain | $120 | 12 month | 1 | $1440 |
| GCP(google cloud platform)  Firebase | $50 | 12 month | 1 | $600 |
| Total |  |  |  | $85,440 |

Here is the Gantt Chat for this project

*图形用户界面

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*图形用户界面

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*表格

中度可信度描述已自动生成*

## Communication Plan

Due to the impact of the epidemic, this project will adopt the mode of remote communication.

The following tools will be used as a communication medium:

1. Miro

There are online movies, mind maps, sticky notes, project management diagrams, and online papers, among other things, as shown in a snapshot of the Miro official website homepage. It's tough to pin down exactly what it is. And they claim that it is a limitless online collaborative drawing board that anybody can utilise to communicate and work online, whether they are a product manager, marketing, designer, or developer.

Miro gives a big artboard, which, while not limitless in size, is more than adequate for expressing thoughts or organising objects. Miro is typically utilised while a concept is still in its infancy. We may not be able to come up with good ideas if we do not have a large, open environment in which to think.

Miro also supports a variety of element rendering techniques. Not to mention the shapes, texts, lines, sticky notes, and pencils that come pre-installed. It also allows you to create mind maps, Kanban boards, and diagrams, as well as insert iframes and intercept web pages. If that isn't enough, you may also install applications to connect to Google Docs, Dropbox, and other services.

2. Monday

Monday.com is so visually appealing, simple, and intuitive that no training is required. Create your perfect workflow in minutes or pick from 200+ pre-made templates based on how real teams use Monday.com. No training is necessary to utilise the simple, visual interface, which allows any team member to hop right in and get started. Used to assign project tasks and track work progress.

3. WhatsApp

An online communication tool for daily chatting and sharing ideas.

4. Github

Synchronize development progress, store source files, and manage code reviews for each developer. Source code backup, etc. Open source free online platform.

## Writing to the audience

Roaster management helps manager to organize and manage staff roasters. In one look, everyone can see who is working for the day and week, who are not on the list for next day, approve day off request, post vacant shift and so much more. As this website is highly dedicated to casual IT staff, they can work with their own choice, if they want to work, they will pick the shift, otherwise they can reject the shift request. In the current scenario, manager is calling every casual staff if they can work next week which is lengthy process and everyone may not be able to receive call all the time and it is not possible to call all the staff every time. After completion of this project, all vacant shift, staff availability is going to be in the system so calling system will be removed slowly. However, they still might have to call for the suitable replacement if there is cancellation of shift in the last moment, not enough people for the project but it won’t be time consuming like the previous system. Analyze, reporting and metrics are important to understand what is doing well and which part need improvement. This website aimed to provide staff with related insight that can be used to make decision, regarding workforce planning, skill management and benefits. It allows demand forecasting and staff are able look at previous data and can assume for future demand and upcoming project that could affect the company. Team can plan and meet the customer requirement correctly and manage shift according to demand.

**This website will provide following feature to the manager and the staff**

* Manage roaster by location and job title,
* Planning table highlights unavailability or shift goes beyond limitation (i.e., if shift exceed the time),
* Task and training are uploaded on the website so staff can take a look about previous task before starting the new shift,
* Can create roaster for week or month based on staff availability in just few moments,
* Provide all the information about the shift and task like notes, place, attachment, time,
* Staff can access their roaster from phone and will be updated in any change as website send automatic reminders,

## Conclusion

The website that is going to be developed for the roaster management meet the basic requirements while it come to task performance. Employees database with their availability, flexibility on picking shift, shift exchange with other colleague, record of staff clock in and clock out, approving leave and tracking vacation time. It delivers accurate time and detailed reports, gives real time communication, notification and reminder top of while there is new update and change. Abacus company can save time and effort that they are currently spending on timesheet and use that time for other office work and documentation. This staff management strategy is more effective and can be easily integrated to the other system like benefit administration and reporting capabilities. It helps to minimize mistake and improve and increase work productivity. Project is design specially for casual staff so can have good user experience. User can use their smartphone for checking timesheet which saves time. As everything’s are included in website so there is no need of printing any document for leave approval, timesheet, training which saves costs and that is benefit for the company. It also helps to create best working environment, finish project within time and bring change in system.

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